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USSR UDC 621.372.827

BARSUKOV, K. A., GAZAZYAN, E. D., LAZIYEV, E. M.

"Theory of Transition Radiation in a Wave Guide"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 191-195

Abstract: Transition radiation in wave guides has been studied in a number of papers [K. A. Barsukov, ZhETF, No 37, 1106, 1959; ZhTF, No 32, 161, 1962] in which a study was made of the characteristic features of this radiation on movement of a charge parallel to the wave guide axis. The experimental difficulties encountered in that research in connection with the narrow band nature of the wave transformers and separation of the beam and radiation can be excluded by moving the beam in the transverse direction to the wave guide axis. A theory of this phenomenon is proposed here for a regular wave guide filled with dielectric with a dielectric constant ε. Expressions are obtained for the radiation fields and intensity. A study was made of the properties of the radiation in the example of a rectangular wave guide, and the conditions determining the Vavilov-Cerenkov radiation spectrum were obtained. Expressions are derived for the Cerenkov radiation energy.

1/1

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USSR

11 Oct 73

GAZENKO, O. G., Corresponding Mbr, AS, USSR, participated in a round-table discussion held in Baku in connection with the opening of the 3rd international students conference of the International Astronautical Society.

Bakinskiy Rabochiy, 13 Oct 73, p 2, col 5

(1)

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Meeting in Baku

(Cont'd from card 2, see ASADOV, I. M.)

MIKHAYLOV, A. A., Academician; eminent Soviet astronomer,
GAZENKO, O. G., Dir, Institute of Medical-Biological Problems; Corresponding Mbr, AS, USSR, and
GUSEYNOV, A. I., Academician-Sec, Division of Physical-Technical and Mathematical Sciences, AS, AzSSR, addressed the meeting.

Bakinskiy Rabochiy, 13 Oct 73, p 1, col 3

(3)

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GAZENKO, O.G. Acad. of Sci.

Invitation List

INDEPENDENCE DAY RECEPTION, 4 July 1973

Spaso House, Moscow

M/M V.A. Trapeznikov	First Deputy Chairman	State Committee for Science and Technology
M/M L.G. Zhimerin	"	"
M/M D.M. Gvishiani	"	"
M/M D.N. Pronskiy	Chief, Foreign Relations Section	"
M/M N.A. Berdennikov	Deputy Chief, "	"
M/M E.A. Aykazyan	Member, "	"
M/M K.V. Ananichev	Chief, International Organization Section	"
M/M G.V. Shvedov	Deputy Chief, "	"
M/M B.F. Vasil'yev	Chief, Protocol Department	"
M/M V.A. Kuzin	Chief, First International Section	"
M/M V.I. Mironov	Deputy Chief, "	"
M/M V.I. Pirogov	Member, "	"
M/M V.A. Kolesnikov	Expert, "	"
M/M Ya.A. Nazarov	Chief, Machine Building Division	"
M/M A.M. Petros'yants	Chairman	State Committee for Utilization of Atomic Energy
M/M I.D. Morokhov	Deputy Chairman	"
M/M G.S. Afonin	Director, Foreign Relations Section	"
M/M B.A. Serytnov	Deputy Director, "	"
M/M D.F. Filippov	"	"
M/M N.A. Titkov	"	"
Mrs. D.F. Khokhlova	"	"
Academician and Mrs. A.P. Aleksandrov	Director	Kurchatov Atomic Energy Institute
M/M N.I. Golovin		"
Academician and Mrs. A.A. Blagonravov	Chairman	Commission for Exploration and Use of Space, Academy of Sciences
Dr/Mrs O.G. Gazenko		
~~Dr/Mrs O.G. Gasenko~~		"
Prof/Mrs E.R. Mustel'	Chairman	Astronomical Council Academy of Sciences
Dr(Mrs) A.G. Masevich	Deputy Chairman	"
M/M A.S. Monin	Director	Institute of Oceanology, Academy of Sciences
M/M A.P. Lisitzyn		"
Academician and Mrs. P.L. Kapitsa	Director	Institute of Physical Problems, Academy of Sciences

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Rpt 26 Jun 73

In the Television Guide for Tuesday, 26 Jun 73, it is noted that the First Program includes at 19:00 the telecast, "Soviet-American Cooperation in Field of Space Medicine."

GUROVSKIY, N. N., Dr of Medical Sciences,
GAZENKO, O. G., Corr-Mbr, AS USSR, and
YEGOROV, B. B., USSR Cosmonaut,
will participate in this telecast.

(3)

Moskovskaya Pravda, col 8; Leninskoye Znamya, col 4; Leningradskaya Pravda, col 7, 26 Jun 73, p 4

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Bio Medical Problems

CONFIDENTIAL
NO FOREIGN DISSEM

SO: Selected Aerospace Medical Facilities
PCS-89
June 1971 (Unc.)

SECTION 1

Name: Institute of Medico-Biological Problems (IMBP), Moscow

Description:

(U) During this quarterly reporting period, one new article from the Institute of Medico-Biological Problems (IMBP) was located. On the basis of that article[1], it was possible to associate two new personalities, V. K. Kovalenkova and V. V. Laptev, with the Institute.

(C/NFD) In the third quarterly report it was mentioned that a number of IMBP personnel attended the 21st Congress of the International Astronautical Federation (IAF), held in Constance, West Germany, October 4-10, 1970. In fact, the entire life sciences contingent of the Soviet delegation was from IMBP. This delegation was made up of: Bio-Medical Problems

- O. G. Gazenko, Director of IMBP
- B. A. Adamovich, Deputy Director of IMBP
- B. B. Yegorov, Department Head at IMBP
- V. V. Portugalov, Head of the Laboratory of Experimental Morphology at IMBP
- G. I. Meleshko, Head of a laboratory department at IMBP
- V. P. Krotov, senior staff member at IMBP
- V. V. Vasil'yev, senior staff member at IMBP
- Ye. M. Kuznicheva, senior staff member at IMBP

In addition to space-related activities, IMBP also has teams of specialists currently working on underwater physiology, alpine physiology, and polar physiology. Recently, discussions have been held at IMBP concerning the need for moving into the area of environmental problems[2].

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GAZENKO, O.G.

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SECRET

TABLE II

CEOS MEMBERS AND THEIR FACILITY ASSOCIATIONS (U)

Member	Facility
Ye. K. Fedorov, Chairman (1962)	Institute of Applied Geophysics, Main Administration of the Hydrometeorological Service
*A. A. Blagonravov, Chairman (1964)	Institute of Machine Sciences, AN SSSR
K. Ya. Kondratyev, Vice Chairman	Leningrad State University
A. S. Berer	Institute of Physiology, AN SSSR; Centrifuge Laboratory, Tsiolkovskiy
G. S. Baliayan	--
Yu. A. Barinov, Scientific Secretary	Institute of Machine Sciences, AN SSSR
V. V. Beletskiy	Institute of Mathematics, AN SSSR
N. I. Budyko	Main Geophysical Observatory
V. N. Chetrigovskiy	Institute of Physiology, AN SSSR
V.Ye. Borovichenko	Physical-Technical Institute, Ministry of Higher and Secondary Specialized Education
*G. N. Duboshin	State Astronomical Institute imeni Shternberg, Moscow State University
O. G. Gazenko	Institute of Medical-Biological Problems, Ministry of Public Health
A. L. Gonor	Scientific Research Institute of Mechanics, Moscow State University
K. I. Gringauz	Radiotechnical Institute, AN SSSR
G. L. Grodzovskiy	Physical-Technical Institute
A. A. Gyurdzhian	Institute of Biophysics, AN SSSR
A. A. Imshinetskiy	Institute of Microbiology, AN SSSR
V. K. Isayev	Institute of Automatics and Telemechanics, AN SSSR
I. G. Khutoretskiy	Institute of Applied Mathematics, AN SSSR
Yu. K. Khodarev	Deputy Director, Institute for Space Research, AN SSSR
Yu. K. Kitayev	All-Union Institute of Scientific and Technical Information
G. G. Konrady	--
A. R. Kotovskaya	--
A. A. Koval	--

*ICIC member

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GAZENKO, O. G.

SPACE

MAN IN SPACE

[Article by Corresponding Member of the AN USSR O. G. Gazenko, Professor L. P. Latash, Doctor of Medical Sciences A. B. Kotovskaya and Candidate of Medical Sciences E. F. Panchenkova; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 42, No 4, April 1972, pp 85-90]

Conference in Yerevan

The Fourth International Symposium on the Principal Problems of the Life of Man in Cosmic Space, held on 1-5 October 1971 in Yerevan, was dedicated to the tenth anniversary of the flight of the first cosmonaut-pilot Yu. A. Gagarin into space. The Symposium was organized by the International Academy of Aeronautics, the AS USSR, and the AS Armenian SSR with the participation of the International Astronautical Federation and the support of the World Health Organization, the International Atomic Energy Agency and the All-Union Physiological Society imeni I. P. Pavlov. Participating in its work were 150 scientists from England, East Germany, Italy, Poland, the USSR, the USA, West Germany, Sweden, and a number of other countries.

The program of the Symposium included three main themes: medical problems of long space flights; study of the mechanisms which are the basis of separate and combined stress effects and possible methods of eliminating undesirable effects; and consideration of biomedical problems to guarantee safety and the practice. In all, at the six working sessions and the 24 reports were heard and several special discussions were held on the most urgent problems.

The Symposium was opened by a report entitled "Ten years of the space era," presented by cosmonaut-pilot V. A. Shatalov. He recalled the principal stages in mastering space, noting the special importance of the flight of Yu. A. Gagarin, and briefly characterized the tasks which must be solved to assure long flights of man in cosmic space.

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USSR

Rpt 24 June 72

GAZENKO, O. G., Corresponding Mbr, AS, USSR, and
GUROVSKIY, N. N., Professor, are interviewed concerning cooperation between the USSR and United States in outer space.

Sovetskaya Kirgiziya, 24 June 72, p 4, col 3

(2)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

GAZENKO, O. G.

Physiology

6 Feb 69 4 PPD:SOVIET SCIENCE

USSR

Izvestiya, 29 Nov 68, p 2

Intensive research is now being conducted by scientists in all countries of the world within the framework of the Hot Universe theory. In particular, new views are being worked out on the processes of galaxy formation. Zeldovich discussed several interesting problems in contemporary astrophysics and the theory of gravitation, and he noted the large contribution made toward their solution by Soviet scientists both in the older generation and among the talented young observers and theoreticians.

Astronomy, the most ancient science, Academician Ya. B. Zeldovich emphasized, is today experiencing a period of youth, brilliant discoveries, passionate discussions, and extremely rapid development.

Participants in the General Assembly of the USSR Academy of Sciences listened to the papers of the two leading Soviet astrophysicists with great interest.

7/7

USSR Academy of Sciences Department of Physiology Meets"

Akademiya Nauk SSSR, Izvestiya, Seriya Biologicheskaya, No 4, 1968, pp 621-623

Abstract: On 5 March 1968 the Department of Physiology of the USSR Academy of Sciences met in Moscow to hear reports on the accomplishments of the department in 1967 and on [illegible] of department matters. Much of this material had been presented previously at the Annual Meeting of the United Scientific Council on Human and Animal Physiology of the USSR Academy of Sciences held in Leningrad on 16-19 January 1968, and V. V. Parin discussed the topic of physiological research on public health and the national economy. Special attention was accorded to papers by P. K. Anokhin, A. N. Leontyev, and B. F. Lomov on problems involving both neurophysiology and experimental psychology. The Council advocated further interdisciplinary efforts by physiologists and psychologists.

The March meeting featured a review of the past year's work by Secretary of the Department of Physiology Academician Ye. M. Kreps. He first considered work on higher nervous activity, mentioning the importance of P. K. Anokhin's work on the concept of the functional system, in the rapprochement of psychology and physiology, and in the

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Akademii Nauk SSSR. Izvestiya. Seriya Biologicheskaya, No 4, 1968, pp 621-623

creative development of Pavlovian theory. Kreps also considered that E. A. Asratyan and A. B. Kogan had made valuable contributions to the reconciliation of modern, pro- [illegible] electrophysiological research methods with classical Pavlovian approaches and methodology.

At the meeting of the United Council, Chernigovskiy had pointed out the necessity of research on the physiological mechanisms of memory, and Kreps underscored his asser- tions, mentioning the work being done by I. S. Beritashvili (Institute of Physiology, Georgian Academy of Sciences); M. N. Livanov (Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR); L. G. Voronin (Moscow State University); [illegible] P. Pavlov (Institute of Physiology, Academy of Sciences USSR); I. M. [illegible] (Institute of Evolutionary Physiology and Biochemistry, Academy of Sciences USSR), and others. Important and relevant work on the biochemical mechanisms of memory is being performed by P. A. Kometiani (Institute of Physiology, Georgian Academy of Sciences).

Noteworthy work on cellular and synaptic mechanisms in the cerebellum and other parts of the central nervous system is being done at the Institute of Physiology imeni 2/4

USSR

Akademii Nauk SSSR. Izvestiya. Seriya Biologicheskaya, No 4, 1968, pp 621-623

L. A. Orbeli of the Armenian Academy of Sciences, and at the Sechenov Institute. In addition, P. G. Kostyuk of the Institute of Physiology of the Ukrainian Academy of Sciences obtained valuable results from studies of the physiological properties and functional characteristics of peripheral neurons operating in various functional systems and on various levels.

Following Kreps' address, O. G. Gazenko reported on the activities of the members of the Department of Physiology. Most of the research being done by Department members is related to nervous system physiology, biochemistry, and morphology; Gazenko felt a need for broader coverage of other areas in physiology, and expressed the opinion that the addition of new members to the Department could lend a desirable diversity. Members of the Department, Gazenko noted, published more than 100 works in 1967, mostly articles in Soviet and foreign journals.

Turning to business matters, Gazenko stated that the administrative tasks of the Department should be divided more evenly among the members, as some were so overburdened with Departmental obligations that it could have an adverse effect upon their work. He 3/4

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Akademii Nauk SSSR. Izvestiya. Seriya Biologicheskaya, No 4, 1968, pp 621-623

then mentioned the international activities of the members and concluded with suggestions aimed at improving the quality of members' individual reports.

After the reports by Kreps and Gazenko had been approved by the meeting, a motion was unanimously adopted affirming the expediency of establishing, under the Presidium of the Academy of Sciences, an independent section of Biological Sciences, to be composed of three departments: General Biology; Physiology; and Biochemistry, Biophysics, and Physiologically-Active Compounds.

REPUBLICS

3. USSR

"Annual Meeting of the Estonian Academy of Sciences"

Akademii Nauk Estonskoy SSSR. Izvestiya. Khimiya i Geologiya, Vol 17, No 3, 1968, pp [illegible]

Abstract: The annual meeting of the Estonian Academy of Sciences held in Tallin on [illegible] March 1968, stressed the necessity for closer cooperation between the Academy's leading scientists and the teaching staffs of Estonian higher educational institutions through the exchange of personnel and information. Elections were held, and Academician Arnol'd Veymer was elected president of the Academy to replace retiring President [illegible]; Academicians Karl Rebane and Nikolay Alumyae were elected vice-presidents; Academician Yukhan Kaavyagi was elected principal scientific secretary of the Presidium; Academicians Aksel Kipper, Gustav Naan, and Corresponding Member Aarne Pung, were elected members of the Presidium; Corresponding Member Il'mar Epik was elected academician-secretary of the Department of Physicomathematical Sciences; Corresponding Member Oskar Kirret to that of the Department of Chemical, Technological, and Biological Sciences, and Corresponding Member Eduard Pyall' to that of the Department of Social Sciences.
[illegible]

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USSR

Rpt 5 Sep 71

GAZENKO, O., Corr-Mbr, AS USSR,
ANTIPOV, Vs., Doctor of Medical Sciences, and
PARFENOV, G., Candidate of Biological Sciences, are co-authors of an article published by the "Novosti" Press Agency entitled "Biological Experiments on Earth-Moon-Earth Route," which includes discussion of the results of a program of biological and radiobiological research and experiments on an earth-moon-earth orbit. This research was conducted during flights of automatic stations of the "Zond" series during the period Sep 68 - Oct 70 with turtles, Drosophilia, onions, wheat and barley seeds, strains of chlorella, bacteria, and other objects on board. Results of analysis of the data obtained have now been derived. The total dose of cosmic radiation recorded was about the same on all flights. After return to earth the turtles were active, moved around a lot, and ate well -- during the experiments they lost about 10% of their weight. Research of certain blood indices and electrocardiograms did not reveal substantial changes in the test animals in comparison with control animals. The flight stimulated the growth and development of wheat and barley seeds and onions and the appearance of certain chromosomal disorders in these objects. In both qualitative and quantitative respects in the majority of cases these changes were not different from shifts recorded in experiments conducted in low near-earth orbits.

Leningradskaya Pravda, 5 Sep 71, p 3, cols 1-7 (3)

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USSR

Rpt 21 Aug 71

GAZENKO, O. , Corresponding Mbr, AS, USSR,
ANTIPOV, V. , Doctor, Medical Sciences, and
PARFENOV, G. , Cand, Biological Sciences, are co-authors of an article concerning biological experiments which have been conducted between the earth and moon.

Sovetskaya Kirgiziya, 21 Aug 71, p 2, col 1

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR 24 Jun 71

The article "Duration Boundary Is Passed" is a report from the Flight Control Center by TASS Special Correspondent D. Dmitriyev on the record sojourn in space aboard the "Salyut" orbital station of Cosmonauts
DOBROVOL'SKIY, Georgiy, Cmdr, "Salyut" station (Call sign: "Yantar'-1"),
VOLKOV, Vladislav, and
PATSAYEV, Viktor,
whose 19 days in a state of weightlessness surpassed the 18-day flight in space a year ago by Cosmonauts
NIKOLAYEV, A. G., and
SEVAST'YANOV, V. I., in the "Soyuz-9" spacecraft. During radio communications with "Zarya" (Ground Control), Dobrovol'skiy reported that they are still hale and hearty, with excellent appetite, no notable fatigue from physical exercises as compared with the start of the flight, and no notable weakening from the gravity-load spacesuits which they wear even during exercises. In commenting on the health of the crew, medical scientists at the Center,
BURNAZYAN, A. I., Dep Minister of Health USSR, and
GAZENKO, O. G., Corr-Mbr, AS USSR,
noted that there is a special trainer for physical exercises aboard the "Salyut," that the cosmonauts each exercise two and one-half hours per day, usually in the "load" suit, and that after 19 days of the flight they were not concerned about the state of the cosmonauts' health since all incoming data on them were normal. Gazenko devoted his discussion to the effect of weightlessness on the human organism, noting that because of ample space "Salyut" presented a unique opportunity for such studies.
Moskovskaya Pravda, 25 Jun 71, p 3, cols 3-8 (7)

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List of persons who signed the obituary of
Parin, Vasiliy Vasil'yevich, Professor; Mbr, Academy of Sciences, USSR;
/Cont from card 3, see KREPS, Ye. M., same date/
GERASINOV, P. I.,
SERENKO, A. F.,
CHAZOV, Ye. I.,
FEDOROV, N. A.,
STRUCHKOV, V. I.,
VORONIN, L. G.,
GAZENKO, O. G.,
CHERNUKH, A. I.,
KASSIL', G. N.

- END -

Pravda, 17 Jun 71, p 6 col 7

(9)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

9 Jul 70

The article "On Behalf of Science, for the Benefit of People" concerns a press conference at Moscow University devoted to the record 18-day manned space flight of the "Soyuz-9" spacecraft and its crew,
NIKOLAYEV, Andriyan Grigor'yevich, USSR Cosmonaut; Hero of Soviet Union (two-time); Cmdr, "Soyuz-9," and
SEVAST'YANOV, Vitaliy Ivanovich, USSR Cosmonaut; Hero of Soviet Union; Flt Engineer, "Soyuz-9." The press conference opened with a speech by
KELDYSH, M. V., Academician; President, AS USSR, who discussed the flight and its significance for future long-term orbital stations and reported that the Presidium of the AS USSR had noted the outstanding contribution of A. G. Nikolayev, who was previously awarded the Gold Medal imeni Tsiolkovskiy, and awarded the Tsiolkovskiy Gold Medal to V. I. Sevast'yanov for their contribution to the development of cosmonautics. In a speech
GAZENKO, O. G., Corr-Mbr, AS USSR, noted the high efficiency of the cosmonauts and concluded that adaptation to normal earth conditions after a lengthy sojourn in a state of weightlessness takes place with certain difficulties and is achieved, apparently, with greater stress of the physiological systems than adaptation to the state of weightlessness. During speeches of the cosmonauts Nikolayev noted that after five-six days on earth body-heaviness after landing disappeared. After their speeches the above-noted answered questions, during which Keldysh noted his belief that man may function in space at least a month, long enough for relief-type stations.
Izvestiya, 11 Jul 70, p 1, cols 3-6; p 2, cols 2-6 (4)

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USSR 8 Apr 68

GAZENKO, O., Corr Mem AS USSR, was among others who celebrated Cosmonauts' Day in Moscow.

Sovetskaya Rossiya, 9 Apr 68, p 4, col 1

1 (9)

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GAZENKO, O. G.

The Academy of Sciences of the USSR announced the names of the following candidates for corresponding member:

Department of Physico-Chemistry and Technology of Non-Organic Materials:

KHESIN-LUR'YE, Roman Beniaminovich, Doctor of Biological Sciences, professor,
SHAKHOV, Aleksandr Aleksandrovich, Doctor of Biological Sciences, professor,
SHLYK, Aleksandr Arkad'yevich, Doctor of Biological Sciences, professor.

Department of Physiology:

BEKHTEREVA, Natal'ya Petrovna, Corresponding Member of the Acad Med Sci of the USSR,
BYZOV, Aleksey Leont'yevich, Doctor of Biological Sciences,
GAZENKO, Oleg Georgiyevich, Doctor of Biological Sciences,

Izvestiya, 14 Jun 66, p 3, col 1

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GAZENKO, O

USSR

The following are among the [illegible] Soviet scientists who [illegible] reports at the [illegible] International Conference on the [illegible] of [illegible] Space for Peaceful Purposes in Vienna:

PARIN, V.V.,
BLAGONRAVOV, [illegible], and
PETROV, B., Academicians;
GAZENKO, O., and
RAUSHENBAKH, [illegible], Corres Mbrs, [illegible];
LEONOV, A., Pilot-Astronaut [illegible].

Komsomol'skaya [illegible], 17 [illegible]

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR 5 Nov 68

A press conference devoted to the successful space flights of the "Soyuz-2" and "Soyuz-3" spacecraft, the latter piloted by BEREGOVOY, G. T., Astronaut; two-time Hero of Soviet Union, who presented a speech and later answered questions, was held at the Moscow State University auditorium. This event is said to be as traditional for astronauts as Baykonur Cosmodrome, Vnukovo Airport, and Red Square. The press conf was opened by KELDYSH, M. V., Academician; President, AS USSR, whose speech placed this space advance in historical perspective with previous flights, and later answered the questions of reporters. A report on the design and structural characteristics of the "Soyuz" spacecraft, compared with previously used spacecraft, was presented by FEOKTISTOV, K., Astronaut; Doctor of Technical Sciences, and a speech on the high operational capabilities of the "Soyuz" spacecraft was presented by GAZENKO, O. G., Corr-Mbr, AS USSR, who afterwards answered questions posed by reporters /texts of speeches/Q.A. session in source/

Izvestiya, 6 Nov 68 (4)

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 591.152:612.8.015

BRUMBERG, V. A., GAZENKO, O. G., Corresponding Member of the USSR Academy of Sciences, DEMIN, N. N., MALKIN, V. B., NEVZNER, L. Z., Physiology Institute imeni I. P. Pavlov of the USSR Academy of Sciences, Leningrad

"Topochemical Differences in the DNA Content in the Motoneurons of the Spinal Cord in the Case of Hypoxia and Hypokinesia"

Moscow, Doklady Akademii nauk SSSR, 1972, Vol 205, No 6, pp 1490-1493

Abstract: The reactions of the motoneurons of the cervical and lumbar enlargements of the spinal cord, that is, neurons which are similar morphologically and with respect to the neuromediator participating in their functional activity but different with respect to the group of muscles innervated by them, to hypoxia and hypokinesia were compared. A highly important fact in the experiments is that the motoneurons of the cervical enlargement innervate the diaphragm and the musculus intercostalis which play a significant role in the regulation of the respiration. Hyperventilation during hypoxia and some reduction in ventilation during hypokinesia essentially distinguish these two states. The experiment was performed on mature white male rats weighing 100± 20 grams divided into four groups: 1) one group in a pressure chamber at an "altitude" of 3,000 meters initially and then daily for 7 days raised by 500 to 1,000 meters and then held for 14 days at an "altitude" of 7,000 meters with daily

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

BRUMBERG, V. A., et al., Doklady Akademii nauk SSSR, 1972, Vol 205, No 6, pp 1490-1493

exposure for 6 hours under rarefied atmospheric conditions; 2) a second group subjected to prolonged forced hypokinesis by placing them for 20 days in small pencil-box cells significantly limiting the possible movements; 3) a third group subjected to the combined effect of hypoxia and hypokinesis for which the animals enclosed in the pen-box cells were placed in the pressure chamber and held under the same hypoxia conditions as the rats in the first group. There was a fourth control group. The decapitation and preparation procedures are described, and data are tabulated on the concentration of cytoplasmic DNA, the volume of cytoplasm and the absolute amount of cytoplasmic DNA in the motoneurons of the anterior horns of the cervical and lumbar enlargements of the spinal column in the presence of hypoxia and hypokinesis. The data indicate different natures of the hypoxic and hypokinetic forms of stress. Hypoxia affects primarily the group of motoneurons which innervates the respiratory musculature, and hypokinesis, and musculature innervating the lower extremities. Neither effect changes the amount of DNA in the neurons of the first group but they both have a similar effect (an increase) on the amount of DNA in the neurons of the second group. An explanation of the possible mechanism of these effects is given.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

Physiology

USSR

GAZENKO, O., Corresponding Member, Academy of Sciences USSR, GIPPENREYTER, YE., Candidate of Biological Sciences, and MALKIN, V., Doctor of Medical Sciences

"Hypoxis as the Cause of Illness"

Moscow, Nauka i Zhizn', No 1, 1970, pp 50-57

Abstract: A study was made of the physiological effects of living and working high altitudes on the human body. Experiments were conducted with pressure chambers which simulated conditions at different altitudes and with persons actually engaged in research and activities at various altitudes. It was determined that at altitudes of 2500-3500 meters, a sense of euphoria is observed, similar to the results of light alcoholic intoxication. At altitudes of 4000-5000 meters, there is a worsening of well-being. Stimulation is replaced by a drop in mental disposition, apathy and melancholia develop, and interest in the enviroment is dulled. At altitudes of about 5000-7000 meters and higher, well-being is rarely observed. General weakness, fatigue and a heaviness in the whole body are felt. Pain in the temples and frontal and rear parts of the head does not stop. Vertigo develops upon abrupt movements. The skin of the face, especially of the lips,

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

GAZENKO, O., et al., Moscow, Nauka i Zhizn', No 1, 1970, pp 50-57

acquires a pale, bluish tint due to the inadequate supply of oxygen in the arterial blood. Chill and a 1-2 degree body temperature rise are observed. Nose bleed and even hemoptysis become more frequent, and sometimes gastric hemorrhage occurs. At these altitudes, there are significant changes in higher nervous activity. Normal sleep is disrupted. Often auditory and visual illusions and hallucinations are observed. It was determined that these illusions and hallucinations emerge as a result of cerebral oxygen insufficiency, and possible becuase of dehydration.

Various measures were recommended to lesson the effects of high-altitude operations. These included a variety of vitamins and drugs, both individual and group psychoprophylaxis to instruct people in what symptoms and effects to expect, and preliminary short-time exposure in different ways to various altitudes for acclimatization purposes. For extremely high-altitude work, oxygen masks were recommended.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I., GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z., MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P., KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional Morphology, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog Rana temporaria in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized Rana temporaria eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

Physiology

USSR G.

GAZENKO, O., Corresponding Member, Academy of Sciences USSR, GIPPENREYTER, YE., Candidate of Biological Sciences, and MALKIN, V., Doctor of Medical Sciences

"Hypoxis as the Cause of Illness"

Moscow, Nauka i Zhizn', No 1, 1970, pp 50-57

Abstract: A study was made of the physiological effects of living and working high altitudes on the human body. Experiments were conducted with pressure chambers which simulated conditions at different altitudes and with persons actually engaged in research and activities at various altitudes. It was determined that at altitudes of 2500-3500 meters, a sense of euphoria is observed, similar to the results of light alcoholic intoxication. At altitudes of 4000-5000 meters, there is a worsening of well-being. Stimulation is replaced by a drop in mental disposition, apathy and melancholia develop, and interest in the enviroment is dulled. At altitudes of about 5000-7000 meters and higher, well-being is rarely observed. General weakness, fatigue and a heaviness in the whole body are felt. Pain in the temples and frontal and rear parts of the head does not stop. Vertigo develops upon abrupt movements. The skin of the face, especially of the lips,
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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

GAZENKO, O., et al., Moscow, Nauka i Zhizn', No 1, 1970, pp 50-57

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Various measures were recommended to lesson the effects of high-altitude operations. These included a variety of vitamins and drugs, both individual and group psychoprophylaxis to instruct people in what symptoms and effects to expect, and preliminary short-time exposure in different ways to various altitudes for acclimatization purposes. For extremely high-altitude work, oxygen masks were recommended.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 541.67:535.34:542.943

VALITOVA, F. G., RYZHMANOV, Yu. M., and GAZETDINOVA, N. G., Kazan' Physical-Chemical Institute, Academy of Sciences, USSR

"Study of the Formation of Free Radicals in the Phosphonehydrazyl Series During an Oxidation Process by the EPR Method"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1491-1494

Abstract: Kinetics of the oxidation processes were studied by the method of EPR spectroscopy on a series of phosphonehydrazine derivatives; the first stage of the oxidation of the products has been recorded. The conclusion was reached that the phosphonehydrazine molecules are bound by a hydrogen bond into associated chains. The calculations carried out showed that the reason for the absence of the super finestructure split due to the ^{31}P nucleus is the fact that only about 1% of the spin density of sp^3 hybridized orbital in ^{31}P phosphonehydrazyl radicals have s character.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 542.91:547.1'118

ARBUZOV, A. Ye. (deceased), VALITOVA, F. G., GAZETDINOVA, N. G., and PETROVA, L. P., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan'

"Alpha-Phenyl-beta-diethyl(diphenyl)phosphonodydrazines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 73, pp 1646-1648

Abstract: Upon the reaction in dry benzene of the chlorides of diethyl and diphenyl phosphate with unsymmetric sodium phenylhydrazine, alpha-phenyl-beta-diethylphosphonohydrazine (I) and alpha-phenyl-beta-diphenylphosphonohydrazine (II), respectively, were obtained instead of the expected alpha-phenyl-alpha-diethyl (diphenyl) phosphonohydrazines. The reaction of I and II with phthalic acid dichloride in dry benzene in the presence of Et_3N led to the formation of 2-phenyl-3-diethylphosphono- and 2-phenyl-3-diphenylphosphono-1,4-phthalazinedione, respectively.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE CLINICAL PICTURE AND X RAY DIAGNOSIS OF COMPLICATED DIVERTICULOSIS OF THE LARGE INTESTINE -U-

AUTHOR-(04)-KHASPEKOV, G.E., BRAYTSEVA, M.D., GAZETOV, B.M., KHAZHINSKAYA, G.M.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 103-107

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GERONTOLOGY, LARGE INTESTINE, DIGESTIVE SYSTEM DISEASE, CANCER, SURGERY, RADIOLOGY, INTESTINAL OBSTRUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1931 STEP NO--UR/0497/70/048/006/0103/0107

CIRC ACCESSION NO--AP0129280

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 023 UNCLASSIFIED

CIRC ACCESSION NO--AP0129280 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIVERTICULOSIS OF THE LARGE INTESTINE IS COMMONLY OBSERVED IN PERSONS OVER 50 YEARS OLD. IN ITS ORIGIN A LEADING ROLE IS PLAYED BY INCREASE OF THE INTRAINTESTINAL PRESSURE AGAINST THE BACKGROUND OF CONGENITAL OR ACQUIRED WEAKNESS OF THE INTESTINAL MUSCULAR LAYER. THE CLINICAL PICTURE OF THE DISEASE IS NOT CHARACTERISTIC. COMPLICATIONS ARE NUMEROUS AND VARIED. THE AUTHORS COMMIT TO PAPER PERSONAL OBSERVATIONS OF COMPLICATIONS OF DIVERTICULOSIS BY PERFORATION, INTESTINAL OBSTRUCTION, FISTULAS, THE DEVELOPMENT OF MALIGNANT RUMORS. THE PAPER CONTAINS A DETAILED CLINICO ROENTGENOLOGICAL PICTURE OF THE DISEASE AND DISCUSSES PROBLEMS OF THE SURGICAL TREATMENT. FACILITY: RENTGENOLOGICHESKOYE OTDELENIYE TSENTRAL'NOY KLINICHESKOY BOL'NITSY IM SEMASHKO, MINISTERSTVA PUTEY SOOBSHCHENIYA SSSR I KURS PROKTOLOGII TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SEPARATION OF A CONCENTRATE OF ORGANOSULFUR COMPOUNDS BY AN ADSORPTION METHOD -U-

AUTHOR-(04)-OBOLENTSEV, R.D., LVAPINA, N.K., GALEYEVA, G.V., GAZEYEVA, V.N.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 110-15

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--DISTILLATION, ORGANOSULFUR COMPOUND, KERSOSENE, CHEMICAL SEPARATION, POLYETHYLENE, ORGANOSILICON COMPOUND, PETROLEUM FRACTION, SULFIDE, THIOPHENE, HYDROCARBON, CHROMATOGRAPHIC SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0564 STEP NO--UR/0204/70/010/001/0110/0115

CIRC ACCESSION NO--AP0119482

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0119482 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMBINATION OF RECTIFICATION AND ADSORPTION CHROMATOG. WAS USED FOR SEPN. OF CONCS. CONTG. ORG. S COMPDS. THESE CONCS. WERE OBTAINED BY EXTN. OF THE KEROSINE FRACTION (150-250DEGREES) OF ARLAN NAPHTHA WITH H SUB2 SO SUB4. THE RECTIFICATION WAS CARRIED OUT UNDER REDUCED PRESSURE IN STAINLESS STEEL AND GLASS APP. A COLUMN OF 290 TIMES 8.8 CM SIZE WITH 34 THEORETICAL PLATES AND 4 TIMES 5 MM LEVIN FILLING WAS USED. A 30 1. CONTAINER WAS HEATED WITH POLY(PHENYLMETHYLSILOXANE) LIQ. NO. 4 TO 200DEGREES. THE RECTIFICATION RATE WAS 200-50 ML-HR AND THE REFLUX RATIO 20-5:1. FIFTEEN STRIPPINGS (10DEGREES FRACTIONS) WERE TAKEN AND FURTHER SEPD. CHROMATOG. ON POLYETHYLENE COLUMNS PACKED WITH SILICA GEL (30-50 MESH: 150-70DEGREES). TWO COLUMNS WERE USED: (A) 12 M TIMES 35 MM PACKED WITH 12 1 ADSORBENT WITH 1.2-KG FRACTIONS AND 8 1. ME SUB2 CO ADDED WITH 0.5 HR.; AND (B) 12 M TIMES 18 MM PACKED WITH 3 1. ADSORBENT WITH 0.3-KG FRACTIONS AND 3 L. ME SUB2 CO WERE USED THE ME SUB2 CO BEING EXPELLED WITH H SUB2 O. FRACTIONS B. LESS THAN 200DEGREES NEED 1-2 CHROMATOGRAPHIC SEPNS.; HIGHER FRACTIONS REQUIRE SEVERAL REPETITIONS OF THE PROCESS. THE CONDD. SAMPLES WERE SEPD. INTO SULFIDE, THIOPHENE, AND HYDROCARBON FRACTIONS OF MOL. WT. 140-205. FACILITY: INST. ORG. KHIM., UFA, USSR.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

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USSR

TESTEMITSANU, N. A., and GAZHIM, S. P., Primenenie mat. metodov i vychisl. tekhn. v prognozir. proizv. tekhn. razvitiya predpriyatii i otrasley nar. kh-va (Use of Mathematical Methods and Computer Techniques in Forecasting of Industrial and Technical Development of Enterprises and Branches of the National Industry -- collection of works), Kishinyev, 1970, pp 119-122 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.9) by O. Losev

of the national income per individual in rubles, x_2 are the expenditures and capital investments in education, x_3 are expenditures and capital investments in public health. Time and factorial values are chosen for an approximation of the disease incidence. A BESM-2M computer was used to forecast disease incidence for 1970-1980 in the Moldavian SSR. For all diseases included in the analysis, a tendency to follow a continuous and gradual decline was established.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 547.26'118 + 547.222

GAZIVOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTANINA, L. P., and RUSALKINA, A. M., Kazan' Chemico-Technological Institute imeni S. M. Kirov

"Reaction of Monochlorophosphites with α-Haloethers"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,575-2,576

Abstract: Dialkylchlorophosphines react with α-haloethers in a manner analogous to the first stage of the Arbuzov reaction. In this study the authors reacted such halides with equimolar amounts of dialkyl chlorophosphites, obtaining the corresponding α-alkoxyethylphosphonate ester chlorides. The reaction was analogous to the Arbuzov reaction. The structure of these products was verified from derivative neutral esters, infrared and paramagnetic resonance data, and elemental analysis for phosphorus and chlorine. Physical constants and structural formulas are given.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 629.78.018.4:620.1

KAYBYSHEV, O. A., NIZAMOV, R. G., GAZIYEV, A. A.

"Experimental Setup and Procedure for Measuring the Dynamic Properties of Metals"

Tr. Ufim. aviats. in-ta (Works of the Ufa Aviation Institute), 1972, vyp. 29, pp 170-180 (from RZh-Raketostroyeniya, otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.247)

Translation: The experimental device permitting investigation of the effect of high-speed deformation on the structure and properties of metals in the deformation rate range of 10^2 seconds to 10^4 seconds is described. The dynamic properties were measured during the process of high-speed deformation considering wave processes by two independent methods: strain gaging and streak photography. The practical inertialess measuring and recording apparatus were used: electric resistance strain gages, a pulsed cathode oscillograph and superhigh speed SFR-2M streak camera. There are 4 illustrations and an 8-entry bibliography.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 669.71.046.44

GAZIYEV, A. I., YEREMIN, N. I., ISMATOV,KH. R.

"Study of Shrinkage of Bauxite Charges During Heating"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 58-63 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G123)

Translation: Results are presented from a study of the shrinkage of bauxite charges during heating. The studies were performed by the method of automated recording of the linear deformation of the briquettes. Synthetic and natural saturated and unsaturated mixtures were studied. These mixtures had the following weight ratios of components: Al_2O_3/SiO_2 = 2.5-3.8 and Al_2O_3/Fe_2O_3 = = 1.2-2.5. The relation between the shrinkage of the charge and its chemical and mineralogical composition at sintering temperatures of 1,160-1,300° is established. There are 2 illustrations and 1 table.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

GAZIYEV, A.I.

UNCLASSIFIED

50 Selected Research Papers

SECTION III

Name: Institute of Biophysics, Pushchino

Description:

biophysics

(U) During this quarterly reporting period, 13 new articles were located from the Institute of Biophysics at Pushchino. On the basis of these articles, it was possible to associate 19 new persons with the Institute. These persons are listed below together with the subjects and dates of the articles:

Abdurmanov, O. K.	endocrine system	1970(17)
Berestovskiy, G. N.	phospholipids	1970(18)
Gaziyev, A. I.	DNA	1970(19)
Ivannikova, A. G.	plant physiology	1969(20)
Kiselev, Ye. Ye.	muscle physiology	1970(21)
Kravchenko, N. A.	EPR spectra	1970(22)
Kurkmanov, A. A.	radiation effects	1970(23)
Panov, A. A.	endocrine system	1970(17)
Pogosyan, V. G.	EPR spectra	1970(22)
Porotikov, V. I.	muscle physiology	1970(21)
Postnikova, G. B.	chromatography	1970(24)
Rozhin, V. D.	phospholipids	1970(18)
Revin, A. F.	radiation effects	1970(23)
Sukhoruchkina, L. V.	chromatography	1970(24)
Trincher, K. S.	plant physiology	1969(20)
Vanilov, Yu. Y.	radiation effects	1970(23)
Zaikin, A. N.	hydrogen peroxide	1970(25)
Zakharevskaya, D. T.	DNA	1970(19)
Zuzin, A. M.	DNA	1970(19)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 575.24

GAZIYEV, A. I., FOMENKO, L. A., SUKHORUCHKINA, L. V., and KUZIN, A. M., Corresponding Member, Academy of Sciences USSR, Institute of Biophysics, Academy of Sciences USSR, Pushchino-na-oke

"Analysis of Internucleotide Breaks in Gamma-Irradiated DNA Reparable With Polynucleotide Ligase"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 1, 1971, pp 216-218

Abstract: The purpose of the work was to study the quantitative relationships between phosphate breaks in DNA reparable and nonreparable by polynucleotide-(PN) ligase as a function of the irradiation dose. The analysis was carried out by quantitatively joining breaks in the phosphate bond with PN-ligase and by splitting off the free phosphorus with alkaline phosphatase. DNA with a radioactive label was obtained from a culture of Bacillus subtilis SHGW grown on a medium containing P^{32}. The yield of breaks reparable and nonreparable by PN-ligase was in a linear relationship to the dose. The number of reparable breaks constituted 77 to 85% of the total. The large number of $5'PO_4 \sim 3'OH$ internucleotide breaks is ascribed to the oxidation of 3'C-desoxyribose and labilization of the 3'- O - P bond.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF POTASSIUM AND SODIUM CONCENTRATION IN THE PLASMA, ERYTHROCYTES, AND URINE OF HEALTHY PERSONS BY FLAME PHOTOMETRY -U-
AUTHOR-(02)-GAZ[redacted]IYEV, F.M., SARIYEV, B.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. MED ZH. 1970, 47(1), 39-41

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLAME PHOTOMETRY, POTASSIUM, SODIUM, BLOOD PLASMA, ERYTHROCYTE, URINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0219 STEP NO--UR/0488/70/047/001/0039/0041

CIRC ACCESSION NO--AP0134024
UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134024
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FLAME PHOTOMETRIC METHOD WAS USED FOR THE DETN. OF K PRIME POSITIVE AND NA PRIME POSITIVE CONCN. IN PLASMA, ERYTHROCYTES, AND URINE OF HEALTHY PERSON. PLASMA WAS DILD. IN THE RATION 1:100, ERYTHROCYTE SUSPENSION 1:200, A DAILY ALIQUOT OF URINE 1:200. THE AV. VALUE OF THE NA PRIME POSITIVE CONCN. IN PLASMA OF HEALTHY PERSONS WAS 135.9, IN ERYTHROCYTES 11, AND IN URINE 146.9 MEQUIV-L. THE AV. VALUE OF THE K PRIME POSITIVE CONCN. IN PLASMA WAS 4.53, IN ERYTHROCYTES 95.4, AND IN URINE 49.97 MEQUIV-L.
FACILITY: AZERB. GOS. MED. INST. IM. NARIMANOVA, BAKU, USSR.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 543.27:[546.264-31+546.21

KLEPTSOVA, A. P., and GAZIYEV, G. A., Institute of Biophysics, Ministry of Health USSR

"Preparation of Calibrated Mixtures of Carbon Monoxide and Oxygen in a Cylinder"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 69-71

Abstract: A technique is described for preparing under pressure calibrated mixtures of oxygen and carbon monoxide in 40-liter cylinders used to transport oxygen for medical purposes. A gas pipet filled with pure carbon monoxide is attached to a cylinder containing oxygen under slight excess pressure (about 0.1 atm). A cushion with oxygen is attached to the free end of the gas pipet. When the cock of the pipet is opened, carbon monoxide is borne into the cylinder with the flow of oxygen. A cylinder of the same size containing pure oxygen is connected to the cylinder with the mixture. When the cocks of both cylinders are opened, oxygen flows into the cylinder with the mixture. The pressure in this cylinder rises to 75 atm. The concentration of carbon monoxide in the cylinder with oxygen remains unchanged for several months despite a decrease in pressure of the gas mixture. The proposed technique is useful in toxicological experiments and to check on the operation of gas analyzers

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

GAZIYEV, G. A.

space physiology

SO: JPRS 54927

28 Dec 71

UDC 612.015.3-06:614.895.3

RATE OF ELIMINATION OF METABOLIC PRODUCTS FROM MAN CONFINED IN INSULATING GEAR (FOR DIFFERENT PHYSICAL LOADS AND DIETS)

[Article by S. M. Gorodinskiy, A. V. Fedov, A. N. Matin, G. A. Gaziyev, A. P. Klepikova and L. I. Zhukova; Moscow, Kosmicheskaya biologiya i Meditsina, Russian, Vol 5, No 5, 1971, submitted for publication 12 May 1969, pp 68-72]

Abstract: Test subjects were given special diets and kept either at rest or performing work at a rate of 200 and 400 Cal/hour in a normal atmosphere. Under these conditions the rate at which they released volatile and gaseous toxic compounds was measured. The subjects who consumed the diets exhibited a significant decrease in the exhalation of hydrogen sulfide, acetone, phenol, amonia and amines in comparison with subjects who ate as they chose. The diets did not affect the rate of elimination of carbon monoxide and carbon dioxide.

In insuring the vital functions of human subjects in a tightly sealed space, including insulating gear, it is of great importance to maintain an optimum atmospheric composition, one of whose principal sources of contamination is man. In designing life-support systems it is essential to know the qualitative and quantitative characteristics of gaseous substances eliminated by man in dependence on the microclimatic conditions in the space beneath the suit.

As a result of our experimental investigations it was established that the rate of human elimination of metabolic products is dependent on the degree of atmospheric rarefaction, ambient temperature, and amount of physical work performed (S. M. Gorodinskiy, et al., 1968, 1969). However, in the Soviet and in the available foreign literature we were unable to find information on change in the rate of elimination of metabolites in the space beneath the helmet and suit in relation to diet.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

1/2 058 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SANITARY CHEMICAL AND HYGIENIC STUDIES OF GAS LIBERATION FROM POLYMER MATERIALS USED AS INSULATION -U-

AUTHOR-(04)-GORODINSKIY, S.M., GAZIYEV, G.A., KOSTERINA, E.I., SEMENENKO, E.I.

COUNTRY OF INFO--USSR

SOURCE--PLAST MASSY 1970, (2), 71-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TOXICITY, INDUSTRIAL HYGIENE, INSULATING MATERIAL, POLYETHYLENE, POLYVINYL CHLORIDE, POLYSTYRENE CHLORIDE,RESIN, POLYCARBONATE RESIN, CAPRONE, EPOXY RESIN, PAINT, VARNISH, METHYL METHACRYLATE, CHEMICAL STABILIZER, REINFORCED PLASTIC, GAS STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0664 STEP NO--UR/0191/70/000/002/0071/0074

CIRC ACCESSION NO--AP0119572

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 058 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119572

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOXICITY AND ODOR OF SIMILAR TO 50 POLYMERS, E. G., POLYETHYLENE, POLY(VINYL CHLORIDE), POLYSTYRENE, POLYCARBONATE, KAPRON, EPOXY RESINS, PAINT AND VARNISH MATERIALS (I) (PREPD. FROM STYRENE-ME AND METHACRYLATE COPOLYMERS) AND GLASS FIBER REINFORCED PLASTICS (II) WERE STUDIED AT MINUS 55 PLUS OR MINUS 5DEGREES AND NORMAL PRESSURE. I AND II LIBERATED TOXIC SUBSTANCES AND HAD A PUNGENT ODOR. THE KINETICS OF GLASS EVOLUTION FROM POLYMERS INDICATED THAT PRELIMINARY HEAT TREATMENT AND VACUUM TREATMENT OF RAW MATERIALS OR FINISHED PRODUCTS REDUCED THE CONTENT OF TOXIC SUBSTANCES IN THE EVOLVED GASES. CHEM. MODIFICATION WITH STABILIZERS, HARDENERS, AND ANTIAGING AGENTS WAS MORE EFFECTIVE. MODIFICATION OF I WITH POLYEHTYLENE POLYAMINE REDUCED THE CONCN. OF THE EVOLVED EPICHLORORHYDRIN, WHEREAS PRELIMINARY HEAT TREATMENT LOWERED THE CONCN. OF PHME IN THE GAS PHASE.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

Acc. Nr: AP0037247 Ref. Code: UR 0301

PRIMARY SOURCE: Voprosy Meditsinskoy Khimii, 1970, Vol 16, Nr 1, pp 101-103

TWO-DIMENSIONAL CHROMATOGRAPHY OF CORTICOSTEROIDS MIXTURE IN THIN LAYER OF KSK SILICA-GEL

Volkova, V. I.; ~~Gaziyev, G.~~ A.; Popova, L. A.

The separation of artificial mixture of biologically important corticosteroids: cortisole, cortisone, their tetrahydroderivatives, corticosterone, aldosterone, 11-dehydrocorticosterone, substance S (according to Reichstein), its tetrahydroderivative, and deoxycorticosterone in thin layer of KSK silica-gel by means of two-dimensional chromatography in systems which do not induce changes in the molecule of corticosteroid. The corticosteroid content of human urine was studied.

REEL/FRAME
19730174

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

Acc. Nr: AP0049799 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0138

101593n **Determining the gas permeability of rubber goods.** Gazev, G. A.; Barkov, A. S.; Sotnikov, E. E.; Faustova, D. G.; Gus'kova, N. I.; Reitlinger, S. A. (Inst. Biofiz., Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 50–2 (Russ). Gas chromatog. was used to det. the permeability to N, H, and CO_2 of polychloroprene (I), natural rubber (II), or containers made of I or II bonded with adhesive SV-1. The method is suggested for testing the quality of bonded joints between plastics. CPJR

REEL/FRAME 19801721

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

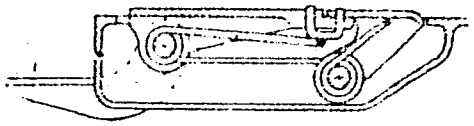
UDC 629.7.023.8

YERMOKHIN, I. G., GAZIYEV, R.

"A Lock for Hatch Covers"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 21, Jul 73, Author's Certificate No 380534, Division B, filed 7 Jan 71, published 15 May 73, p 67

Translation: This Author's Certificate introduces a lock for hatch covers which contains two spring-loaded levers mounted on axles: the first lever opens and closes the hatch and is made up of a toggle and clamp, and the second lever holds the first in the closed position. As a distinguishing feature of the patent, operating reliability is improved by enclosing the lock in a housing with a trough-shaped cross section, and making the clamp of the opening and closing lever so that it projects outside the lock housing. A clip catch is located in a hole made in the lever toggle.



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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 547.26'118 + 546.185.131

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., and TREGUBOVA, T. V., Kazan' Chemical Technological Institute imeni S. M. Kirov

"Reaction of Neutral Esters of α-Alkoxyethylphosphonic Acids With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, p 2087

Abstract: The reaction of neutral esters of α-alkoxyethylphosphonic acid with PCl_5, taking the reagents at the ratio of 1:3, at 40° for 15 hrs, yields α-alkoxyvinylphosphonic acid chlorides (I) and alkyldichlorophosphates (II), in addition to phosphorus oxychloride, hydrogen chloride and alkyl halides: R' or R, the yield in %, b.p.°/mm Hg, d_4^{20}, n_D^{20} for (I) for (I) are being reported: C_2H_5, 74.0, 63/0.03, 1.3269, 1.4910; C_4H_9, 66.7, 85/0.07, 1.2334, 1.4870; and for (II): C_2H_5, 17.0, 81/43, 1.3823, 1.4340; C_3H_7, 32.8, 67/10, 1.3082, 1.4380.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 547.26'118 + 547.292.6

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTANINA, L. P., ZYKOVA, T. V., and SALAKHUTDINOV, R. A., Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Trivalent Phosphorus Trichloride With Acetic Anhydride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2160-2165

Abstract: Experimental data are reported of the reaction of alkyldichlorophosphites, aryl- and ethyldichlorophosphines (I) with acetic anhydride (II). The same reactions were also studied in presence of α-chloroesters (III). Reaction products were studied by means of IR and NMR spectroscopy, by chemical methods and thin layer chromatography. On the basis of NMR ^{31}P it has been shown that in the reaction of (I) with (II) a gradual substitution of chlorine atoms by acetoxy groups takes place in compound (I). A synthetic method has been developed for the chloroanhydrides and anhydrides of α-alkoxyethylphosphonic and phosphinic acids directly from the derivatives of the phosphorous and phosphinous acids.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 547.26'118 + 546.183-31

GAZIZOV, M. B., RAZUMOV, A. I., SYRNEVA, L. P., and RUDAKOVA, L. G.,
Kazan' Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Phosphorylated Acetals With Trivalent Phosphorus Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, p 2787

Abstract: Phosphorylated acetals react with diethylchlorophosphite after 8 hrs heating at 50-60° yielding diethylphosphorous acid and esters of β-ethoxyvinylphosphonic or phosphinic acids -- $R(C_2H_5O)P(O)CH{:}CHOC_2H_5$; R, yield in %, b.p./mm pressure, d_4^{20}, and n_D^{20} being reported: C_2H_5O, 74.2, 75°/0.12, 1.0700, 1.4435; CH_3, 65.7, 80/0.25, 1.0524, 1.4570; C_2H_5, 77.5, 74°/0.09, 1.0367, 1.4560.

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UDC 547.26'118+547.29'26

GAZIZOV, M. B., RAZUMOV, A. I., and SEKERIN, YE. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reaction of Diethoxymethyl Ester of Acetic Acid With Dialkylchlorophosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, p 1407

Abstract: Reaction of diethyl- and dipropylchlorophosphites with diethoxymethyl acetate occurs smoothly already at room temperature. For completion it is necessary to heat the mixture for 3 hrs to 50°C. The products of this reaction are phosphorylated formals and α-ketophosphonic esters of the type $(RO)_2P(O)CH(OC_2H_5)_2$ and $(RO)_2P(O)C(O)CH_3$ respectively.

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USSR UDC 547.26'118 + 547.292.6

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., YELNIKOVA, G. N., and OSTANINA, L. P., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reaction of Aryldichlorophosphines With Acetic Acid Acylals"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 2112-2113

Abstract: Aryldichlorophosphines react with equimolar quantities of acetic acid acylals at 50° yielding α-alkoxyethylarylphosphinic acid chlorides. The yields of these products can be improved by using excess chlorophosphine or running the reaction in presence of an equimolar quantity of α-chloroether.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR UDC 547.26'118 + 547.292.6

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTANINA, L. P., SHAKIROV, I. Kh., ZYKOVA, T. V., and SALAKHUTDINOV, R. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reaction of Dialkyl Chlorophosphites With Acetic Acid Acylals"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2634-2638

Abstract: It was shown that alpha-chloroethers formed in the reaction of dialkyl chlorophosphites with acetic acid acylals undergo secondary reactions with dialkyl chlorophosphites forming ester-acid chlorides of α-alkoxyethylphosphonic acids. It was shown by IR spectroscopy that the ester-acid chlorides of α-alkoxyethylphosphonic acids exist in two conformations resulting from different orientation of the polar bonds P:O and C-O: conformation A with parallel (cis) or nearly parallel (gauche) orientation of P:O and C-O, and the conformation B with the antiparallel trans orientation of these bonds. Purification methods were proposed for α-chloroethers and dialkyl chlorophosphites by treatment with cateehol chlorophosphite and with acetyl chloride respectively to remove the acetal and trialkyl phosphite impurities.

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USSR

UDC 547.26'118+547.2926

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTAKHA, L. P., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Reaction of Alkyl Dichlorophosphites with Acetic Acid Acylals"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, p 1647

Abstract: It was found that carboxylic acid acylals (I) react with alkyl dichlorophosphites (II) to give α-alkoxyethylphosphonic acid ester chlorides and the corresponding pyrophosphonates. In this reaction the alkyl dichlorophosphites show electrophilic properties.

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1/2 032 UNCLASSIFIED PROCESSING DATE 20NOV70

TITLE--INVESTIGATION OF THE INJECTION PROCESS OF A PLASMA HELIX IN A TRANSVERSE MAGNETIC FIELD -U-

AUTHOR-(03)-GAZIYEV, U.KH., UMAROV, G.YA., ALIMOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UZBEKSKOI SSR, IZVESTIIA, SERIIA FIZIKO-MATEMATICHESKIKH NAUK, VOL. 14, NO. 1, 1970, P. 75-77

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TRANSVERSE MAGNETIC FIELD, PLASMA INJECTION, BETATRON, OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1253 STEP NO--UR/0166/70/014/001/0075/0077

CIRC ACCESSION NO--AP0124904

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124904

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE EQUILIBRIUM AND STABILITY OF A PLASMA HELIX IN A BETATRON MAGNETIC FIELD IN A VACUUM OF 0.000005 MM HG. THE EQUIPMENT EMPLOYED CONSISTED OF THE VACUUM AND MAGNETIC SYSTEMS, A MAGNETIC PROBE, A ROGOVSKII COIL, A DISCHARGER, AN ACTUATOR, A CAPACITOR BANK, AND A RECTIFIER. OSCILLOGRAMS SHOWING THE FORMATION AND OSCILLATIONS OF THE PLASMA HELIX AS A FUNCTION OF THE MAGNETIC FIELD STRENGTH FOR EACH HALF PERIOD OF OSCILLATION ARE PRESENTED. IT IS SHOWN THAT THE MAGNETIC FIELD OF THE PLASMA HELIX DECREASES WITH DECREASING EXTERNAL MAGNETIC FIELD, AND THAT THE HIGH FREQUENCY OSCILLATIONS ARE RAPIDLY DAMED DUE TO OHMIC HEATING OF THE PLASMA HELIX. FACILITY: AKADEMIIA NAUK UZBEKSKOI SSR, FIZIKO TEKHNICHESKII INSTITUT, TASHKENT, UZBEK SSR.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

GAZIYEV, Ya. I.

JPRS 60185

2 October 1973

FORMATION OF RADIOACTIVE PARTICLES IN NUCLEAR EXPLOSIONS

Selected articles from the Russian-language journal Trudy Institute Eksperimental'noy Meteorologii, No. 21, 1971, Moscow.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RADIOACTIVE AEROSOL DISTRIBUTION IN THE MIDDLE AND UPPER TROPHOSPHERE OVER THE USSR IN 1963-1968 -U-

AUTHOR-(05)-NAZAROV, L.E., KUZENKOV, A.F., MALAKHOV, S.G., VOLOKITINA, L.A., GAZIEV, YA.I.

COUNTRY OF INFO--USSR

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3575-88

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOACTIVE AEROSOL, TROPOSPHERE, FISSION PRODUCT, STRATOSPHERE, JET STREAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0933 STEP NO--US/0000/70/075/018/3575/3588

CIRC ACCESSION NO--AP0136364

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF RN DAUGHTERS AND CONCN. OF AEROSOL FISSION PRODUCTS IN THE TROPOSPHERE WERE MEASURED OVER THE USSR DURING SEVERAL PERIODS FROM 1963 TO 1968. AN INTENSIVE FISSION PRODUCT TRANSPORT FROM THE STRATOSPHERE TO THE TROPOSPHERE OCCURS ON THE CYCLONIC SIDE OF THE JET STREAM. AS A RULE, THE INCLUSION OF THESE PRODUCTS IN THE SURFACE AIR IS OBSERVED ON THE ANTICYCLONIC SIDE OF THE JET STREAM. THE SIMPLEST THEORETICAL SCHEME IS GIVEN TO DESCRIBE THE VERTICAL DISTRIBUTION OF RN AND FISSION PRODUCT CONCNS. IN THE TROPOSPHERE; THE THEORY TAKES INTO ACCOUNT THE VERTICAL TURBULENT EXCHANGE COEFF. AND VERTICAL MOTION. THE DIRECTIONS OF VERTICAL MOTION, ESTD. FROM THE VERTICAL DISTRIBUTION OF BOTH RN AND FISSION PRODUCTS IN THE TROPOSPHERE, AGREE VERY CLOSELY WITH METEOROL. DATA. FACILITY: HYDROMETEOROL. SERV., INST. EXPTL. METEOROL., OBNINSK, USSR.

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USSR UDC 547.26'118+547.29'26

GAZIZOV, M. B., SULTANOVA, D. B., OSTANINA, L. P., ZYKOVA, T. V., SALAKHUTDINOV, R. A., RAZUMOV, A. I., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Reaction of Monochlorophosphites With Acylals of Acetic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2167-2171

Abstract: The mechanism of the reactions of aromatic chlorophosphites with α-alkoxyalkyl acetates was studied by physicochemical analysis of the high-boiling fraction of the reaction products. Heating o-phenylene- or o-benzoylene chlorophosphites with α-ethoxyethyl acetate at 50° gave α-ethoxyethylphosphonates which were identified by their IR, ESR, and NMR spectra. Analogous reactions of the cited cyclic chlorophosphites with α-chloroethyl ether or diethyl acetal gave the same products with a phosphonate structure. Thus, the cited reactions proceed by a stepwide mechanism leading to formation of phosphonate and not a phosphite structure. The reaction mechanism involving an intercyclic

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USSR

GAZIZOV, M. B., et al, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2167-2171

electron transfer is outlined. Analysis of the ESR spectrum of one of the products, 2-(α-ethoxyethyl)-2,4-dioxobenzo-1,3,2-dioxaphosphorene, revealed the existence of two stable conformational isomers of the compound, which differ in orientation of methyl protons in relation to the benzene ring and the oxygen of the carbonyl. The ESR spectra of the two compounds are shown and their physical constants are tabulated.

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USSR

UDC 547.26'118+547.292'26

GAZIZOV, M. B., SULTANOVA, D. B., MOSKVA, V. V., MAYKOVA, A. I., and RAZUMOV, A. I.

"Reaction of Diethyl Chlorophosphite With Carboxylic Acid Acylals"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 932-933

Abstract: Acetic acid acylals react easily with diethyl chlorophosphite yielding a mixture of products consisting of ethyl acetophosphonate, ethyl α-alkoxyethylphosphonate, an α-chloroether, and acetyl chloride.

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USSR

SIMONOV, V. D., GAZIZOV, R. T., MAMINA, F. A., SHARIF'YANOVA, L. N.

"Chromatographic Determination of Cyclical Carbon Chlorides and Their Carbocyclical Derivatives"

Dokl. Neftikhim. Sektsii. B'ashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva, [Works of Petrochemical Section, Vashkir Rebpulic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 320-323. (Translated from Referativnyy Zhur-al Khimiya, No 4, Moscow, 1972, Abstract No 4N652 by I. A. Revel'skiy).

Translation: A mixture of thymol perchloromethylene-3-cyclopentene, hexacholofulvene, 2, 3, 4, 4-tetrachoioro-5-dichloromethylene-2-cyclo-1-pentenone and 2, 3-dichloro-5-dichloromethylene-2-cyclo-1, 4-pentenedione is separated by GLC with a heat conductivity detector on a combined glass column (160+20× 0.4 cm), the first section of which contains silanized celite 545 with 15% polyethylene glycoladipate, while the second contains the same carrier with 10% type SE-30 methyl silicone, at a temperature of 190° and a He gas carrier rate of 90 ml per minute.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

SIMONOV, V. D., GAZIZOV, R. T., IVANOV, A. V.

"Synthesis of Cyclical Perchlorinated Pentenes"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 317-319. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N684 by T. A. Belyeva).

Translation: A method is developed for production of octachlorocyclopentene (I) initiated by chlorination of hexachlorocyclopentadiene (II) or octachloro-1, 3-pentadiene in a medium of HSO_3Cl (III). Cl_2 is passed (22.3 l/hr) through a mixture of 81.9 g II and 140 g III at about 20° for 5 hrs. The temperature of the reaction mixture is 40-45°. It is cooled to +10° and I is filtered off, mp 37-8°. 8.16 g of hexachlorofulvene is treated with 26.4 g III at 0±2° for 80 minutes, producing 10 g of percholoromethylene-Δ^3-cyclopentene.

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USSR

SIMONOV, V. D., IVANOV, A. V., GAZIZOV, R. T., NEDEL'CHENKO, V. M., KHRENOVA, N. N.

"Method of Producing Octachlorocyclopentene"

USSR Author's Certificate No 303312, filed 6/01/69, published 28/06/71. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N591P by T. A. Belyaeva).

Translation: Octachlorocyclopentene (I), intermediate product for synthesis of pesticides, is produced by chlorination of hexachlorocyclopentadiene (II) or octachloropentadiene in a medium of chlorosulfonic acid (III) at a temperature of 40-45°. Cl_2 gas is passed through a mixture of 81.9 g II and 140 g III for 5 hr at 40-45°, gas temperature about 20° (2.3 l/hr). It is then cooled to 10°, filtered, the precipitate is washed with water, dried in air, producing I, m. p. 37-8°. III is returned to the process.

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USSR UDC 547.26'118 + 547.442.2

GAZIZOV, T. Kh., KIBARDIN, A. M., PASHINKIN, A. P., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Dialkyl Acyl Phosphites With Diacetyl"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2626-2631

Abstract: Reactions of dialkyl acyl phosphites with diacetyl and benzyl was studied showing that basically they yield dialkyl α-methyl-β-methyl-β-acyloxyvinyl phosphates. As the acid strength of the carboxylic acid comprising the acyl phosphite is increased, the direction of the reaction is shifted partially towards the formation of an alkyl carboxylate and a cyclic alkyl α,β-dimethylvinyl phosphate, respectively.

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UDC 547.26'118 + 547.446.1

PUDOVIK, A. N., GAZIZOV, T. Kh., and SUDAREV, Yu. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Trimethylsilyl Diethyl Phosphite With Chloral"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, p 2086

Abstract: Trimethylsilyl diethyl phosphite reacts with chloral in ether solution at -60° yielding diethyl α-trimethylsiloxy-β,β,β-trichloroethylphosphonate (I), d_4^{20} 1.2474, n_D^{20} 1.4610. Heating (I) at 140-150°/100 mm for 16 hrs yields diethyl β,β-dichlorovinyl phosphate b.p. 127-128°/12 mm, d_4^{20} 1.2990, n_D^{20} 1.4490 and trimethylchlorosilane, b.p. 55-56°, d_4^{20} 0.8571, n_D^{20} 1.3855.

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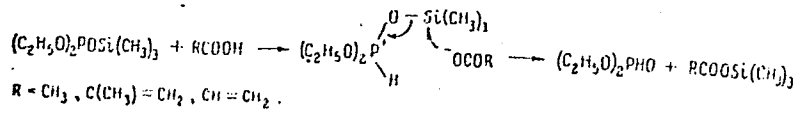
UDC 547.26'118

GAZIZOV, T. KH., KHARLAMOV, V. A., and PUDOVIK, A. N., The Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzova, Academy of Sciences USSR

"The Reaction of Trimethylsily Diethyl Esters of Phosphorous Acid with Organic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 1579-1580

Abstract: The title reaction using acetic acid proceeds with the formation of diethylphosphorus acid and trimethylsilyl acetate according to the following reaction:



$R = CH_3, C(CH_3)=CH_2, CH=CH_2$.

The analogous reaction occurs with methacrylic and acrylic acids. Thus, these substituted phosphorous acids react with either saturated or with α, β-unsaturated organic acids by the Arbuzov reaction due to the initial protonation of the phosphorous atom of the silophosphorous acid.

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GAZIZOV, T. Kh., PASHINKIN, A. P., and PUDOVIK, A. N.

"Reaction of Tetraethyl Pyrophosphite With the Halogens, Acetyl Chloride, and Acrylic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,418-2,420

Abstract: The published information on the reactivity of tetraalkyl pyrophosphites toward various electrophilic reagents is limited; here the reactions of tetraethylpyrophosphite with chlorine, bromine, acetyl chloride and acrylic acid are studied. In the reaction with the first three reagents, the corresponding acyl halides were formed in addition to diethyl halophosphates and diethyl acetophosphonate. In the case of the reaction with acrylic acid, diethylphosphorous acid was formed, along with diethyl acryloylphosphite.

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USSR

UDC 547.241+547.391.1

GAZIZOV, T. Kh., VASYANINA, M. A., PASHINKIN, A. P., ANOSHINA, N. P., GOL'DFARB, Z. I., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Mechanism of the Reaction of Diethyl Chlorophosphite With Acrylic Acid"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1957-1961

Abstract: The study of the reaction of diethyl chlorophosphite with acrylic acid using P^{31} NMR and thermography gives rise to the conclusion that protonation of the phosphorus atom either completely initiates or predominates in the reaction which is followed by the addition of diethylphosphorus acid (an intermediate product formed in the early stage of the reaction) to the acrylic acid chloride. The experimental portion of the paper covers in detail the reactions of diethyl chlorophosphite with acrylic acid, diethyl acroyl phosphite with hydrogen chloride and diethylphosphorous acid with acrylic acid chloride.

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USSR UDC 542.91:661.718.1

GAZIZOV, T. Kh., MAREYEV, Yu. M., VINOGRADOVA, V. S., PUDOVIK, A. N., and ARBUZOV, B. A., Chemistry Institute imeni A. M. Butlerov, Kazan' State University imeni V. I. Ul'yanov-Lenin, and Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Interaction of Trialkyl Phosphites with α,β-Unsaturated Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1259-1266

Abstract: Experimental material indicates that the addition of trialkyl phosphites to α,β-unsaturated acids may proceed by preliminary protonation of the trialkyl phosphites by the unsaturated acids, with subsequent addition of the resultant dialkylphosphorous acids to esters of the unsaturated acids to give trialkyl esters of the corresponding β-phosphonocarboxylic acids, according to the scheme

$$(RO)_3P + CH_2{=}CH{-}COOH \rightarrow (RO)_3\overset{+}{P}H + CH_2{=}CH{-}\overset{O}{\overset{\|}{C}}{-}O^{\ominus} \rightarrow$$

$$\rightarrow (RO)_2\overset{O}{\overset{\|}{P}}{-}H + CH_2{=}CH{-}COOR \rightarrow (RO)_2\overset{O}{\overset{\|}{P}}{-}CH_2{-}CH_2COOR$$

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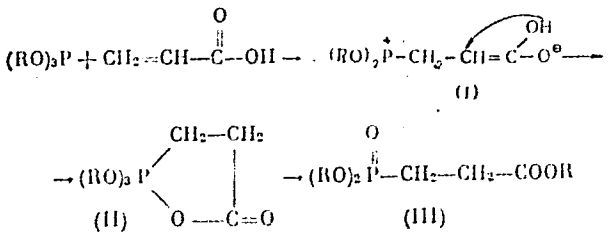
GAZIZOV, T. Kh., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1259-1266

It is also possible that these reactions proceed according to the scheme suggested by V. A. KUKHTIN and G. Kh. KAMAY, viz.



but without the formation of an intermediate cyclic product of the phosphorane type. The reaction may proceed simultaneously according to both schemes.

The interaction of trimethyl phosphite with acrylic acid, along with trimethyl ester of β-phosphonopropionic acid, gives a small amount of the cyclic anhydride of methyl ester of β-phosphonopropionic acid. The latter is obtained in much greater quantities in the presence of acetic acid. The

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GAZIZOV, T. Kh., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1259-1266

formation of an analogous cyclic anhydride is observed in the interaction of triethyl phosphite with methacrylic acid, as well as in the presence of acetic acid.

The authors thank E. I. COL'DFARB for taking the NMR spectra.

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USSR UDC: 547.183.325+547.387

GAZIZOV, T. Kh., PASHINKIN, A. P., and PUDOVIK, A. N.

"Thermal Isomerization of a Mixed Anhydride of Diethylphosphorous and Acrylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 31-32

Abstract: An investigation of the product of thermal isomerization of the anhydride confirmed the formation of 1,3-di(diethoxyphosphonyl)propenyl acrylate (I) according to the proposed two-step reaction scheme. Presumably, (diethoxy)phosphonylmethylketene (II) formed in the first step of isomerization subsequently reacts with the starting anhydride to give I. Heating the final product of thermal isomerization of the title anhydride with excen absolute ethanol and two drops triethylamine gave 48% diethylphosphorous acid and 61.3% ethyl beta-diethylphosphonylpropionate. The result was explained as alcoholysis of the oster function in I followed by breaking of the P-C bond in the presence of the ethoxide anion. Passing ketene through the title anhydride at 20° yielded about 60% alpha-diethoxyphosphonylvinyl acrylate, identified by its physical constants and IR spectrum. The above reactions were seen as confirmation of the proposed thermal isomerization scheme of the mixed anhydride.

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UDC 546.183.325 + 547.446.26'118

PASHINKIN, A. P., GAZIZOV, T. KH., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Some Reactions of Mixed Anhydrides of Carboxylic and Dialkylphosphorous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1481-1485

Abstract: The authors studied the interaction of chloral with mixed anhydrides of diethylphosphorous acid and formic, isobutyric, pivalic and acrylic acids, as well as the mixed anhydride of diisopropylphosphorous and acetic acids. It was found that the reaction of chloral with the mixed anhydride of diethylphosphorous acid and formic acid follows an Arbuzov reaction scheme to give the ester of formic acid and diethoxyphosphomotrichloromethylcarbinol. The reactions with the other mixed anhydrides proceed analogously. The mixed anhydride of diethylphosphorous acid and benzoic acid or its p-substituted derivatives reacts with chloral in two directions, viz. according to the Ar-

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PASHINKIN, A. P., et al., Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1481-1485

buzov scheme and the Perkov scheme. If a methyl group possessing a positive inductive effect is introduced into the p-position, there is an increase in the yield of the Perkov scheme product and a decrease in the Arbuzov scheme product. The introduction of a nitro group possessing a negative inductive effect directs the reaction completely towards the formation of a phosphonate.

The reactions of the mixed anhydrides of dialkylphosphorous and carboxylic acids with iodine, bromine and acetyl halides were studied. It was found that the reactions of diisopropyl acetylphosphite and diethyl benzoylphosphite with bromine at a low temperature proceed according to the Arbuzov scheme to give carboxylic and dialkylphosphoric acid halides, which subsequently interact to give an alkyl halide.

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USSR UDC: 547.26+547.233+546.185.325

PASHINKIN, A. P., GAZIZOV, T. Kh., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan', Academy of Sciences USSR

"Rupture of the Phosphorus-Carbon Bond in Alpha-Ketophosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 28-30

Abstract: Reactions of esters alpha-ketophosphonic acid (I), where R is methyl, isopropyl, ter. butyl, or phenyl, with nucleophilic agents, such as alcohols and amines, proceed under relatively mild conditions and result in rupture of the P-C bond. Nucleophilic substitution is thought to be the mechanism of the bond rupture. The composition of the reaction products is greatly affected by the ratio of the reactants. Thus, heating a 1:10 mixture of (I) with ethanol without a catalyst, gave diethylphosphorous acid (yield 92%), and ethyl acetate. The same mixture but in the presence of 3-4 drops triethylamine gave at room temperature an 85% yield of ethanol and ethyl acetate. Adding 2-3 drops of triethylamine to a 1:1 mixture of (I) and ethanol gave diethylphosphorous acid (yield 31.9%) and diethyl (alpha-diethylphosphonethyl) phosphate (II) (yield 55.5%). Apparently, II was formed by phosphonate-phosphate isomerization under the influence of the basic catalyst. Formation

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PASHINKIN, A. P., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 28-30

of (II) may be minimized by the presence of a large excess of the nucleophilic agent. The reactions with primary aliphatic amines proceed similarly but much easier, and the exothermic effect is significantly higher than with ethanol. Dialkylphosphorous acid and an amide of the corresponding carboxylic acid are formed. Formation of (II) was also observed in these reactions. The reactions with aniline are more complex. Dialkylphosphorous acid and anilides of carboxylic acids were obtained in low yields only.

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USSR UDC: 547.26+547.233+546.185.325

PASHINKIN, A. P., GAZIZOV, T. Kh., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan', Academy of Sciences USSR

"Rupture of the Phosphorus-Carbon Bond in Alpha-Ketophosphonate Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 28-30

Abstract: Reactions of alpha-ketophosphonate esters (I), where R at P is methyl, isopropyl, tert-butyl, or phenyl with nucleophilic agents, such as alcohols and amines, proceed under relatively mild conditions and result in rupture of the P-C bond. Nucleophilic substitution is thought to be the mechanism of the bond rupture. The composition of the reaction products is greatly affected by the ratio of the reactants. Adding 2-3 drops of triethylamine to a 1:1 mixture of (I) and ethanol gave diethylphosphorous acid (yield 31.9%) and diethyl alpha-diethylphosphonethyl phosphate (II) (yield 55.5%). Apparently, II was formed by phosphonate-phosphate isomerization under the influence of the basic catalyst. Formation of (II) may be minimized by the presence of a large excess of the nucleophilic agent. The reactions with primary aliphatic amines proceed similarly but much easier, and the exothermic effect is significantly higher than with ethanol. Dialkylphosphorous acid and an amide of the corresponding carboxylic acid are formed.

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PASHINKIN, A. P., et al, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 28-30

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002200910007-0

USSR

UDC 542.944 + 546.14 + 661.718.1

PASHINKIN, A. P., GAZIZOV, T. Kh., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. E. Arbuzov, Academy of Sciences, USSR

"Ethyl o-Benzoylenephosphite Reaction With Bromine"

Moscow, Izvestiya Akademii Nauk USSR, Seriya Khimicheskaya, No 2, Feb 71, pp 437-439

Abstract: The reaction of ethyl o-benzoylenephosphite with bromine follows the Arbuzov reaction, forming etnyl o-bromoformylphenylphosphonic acid bromide which then decomposes to ethyl bromide and o-benzoylenephosphonic acid bromide. Bromine was added slowly to ethyl o-benzoylenephosphite, the temperature was then brought up to 100°, ethyl bromide was evaporated, the residue treated with an equimolar mixture of ethanol and triethylamine in benzene. The mixture was refluxed in benzene for 2 hrs, filtered and ethyl o-benzoylenephosphate isolated by distillation. When the same reaction was carried out at temperatures below -10°C, the product was diethyl o-carbethoxyphenylphosphate, b.p. 124-125°/0.006 mm, d_4^{20} 1.1893, n_D^{20} 1.4543.

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USSR UDC 547.391.1+546.183.325

GAZIZOV, T. Kh., PUDOVIK, A. N. Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov Academy of Sciences USSR

"Reaction of Dialkyl Acylphosphites with Acrylic Acid"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1202-1205

Abstract: The reaction mechanism of mixed anhydrides of dialkyl phosphites and carboxylic acids with α,β-unsaturated carboxylic acids was studied. Initial attack of the proton from the α,β-unsaturated acid on the P atom was found to be the determining step. Diethyl phosphite can react only in this way with the mixed anhydride of acrylic and acetic acid. In the presence of a small amount of triethyl phosphite, the reaction leads to the formation of the mixed anhydride of β-(diethylphosphono) propionic acid and acetic acid which subsequently disproportionates to β-(diethylphosphono)propionic acid anhydride and acetic anhydride. $(C_2H_5O)_2POCOCH_2=CH_2$ reacted with acetic acid according to the same mechanism to form diethyl phosphite and the anhydride of β-(diethylphosphino)propionic acid.

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UDC 547.26'118

GAZIZOV, T. KH., PASHINKIN, A. P., PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Diethylacetylphosphite Reaction With Amines"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, p 2130

Abstract: Reaction of diethylacetylphosphite (I) with diethylamine (II) carried out in petroleum ether at -5° gave diethylammonium acetate and diethylphosphorous acid diethylamide when the reagent ratio was 1:3. A 1:1 ratio of (I) to (II) gave a mixture of diethylphosphorous acid (III) and diethylamide of acetic acid. Reaction of (I) with dibutylamine is also dependent on the ratio of reagents. When aniline was reacted with (I), acetanilide and (III) were formed, but when the reaction was carried out in the presence of triethylamine, the anilide of (III) was obtained. It is proposed that the reaction between dialkylacylphosphites and amines is a reversible reaction.

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GAZIZOV T. Kh.

Acc. Nr: AP0049134 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0079

100826d Thermal isomerization of a mixed anhydride of diethyl phosphorous and acrylic acids. Gazizov, T. Kh.; Pashinkin, A. P.; Pudovik, A. N. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 31–2 (Russ). $(EtO)_2POC(O)CH:CH_2$ (I) formed from thermal isomerization of the mixed anhydride of $(EtO)_2POH$ and $CH_2:CHCO_2H$ heated with excess abs. EtOH in the presence of a drop of Et_3N 2 hr gave 48% $(EtO)_2PHO$ and 61.3% $(EtO)_2P(O)CH_2CH_2CO_2Et$, $b_{1.5}$ 109–10°, d^{20} 1.1016, n_D^{20} 1.4310. Passing $CH_2:CO$ into $(EtO)_2P(O_2CCH:CH_2)$ 50 min at room temp. resulted in an exothermic reaction that yielded 59.9% $(EtO)_2P(O)C(:CH_2)O_2CCH:CH_2$, $b_{0.01}$ 84–5°, 1.1089, 1.4510.

G. M. Kosolapoff

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GAZIZOV, T. Kh., KIBARDIN, A. M., PASHINKIN, A. P., SUDAREV, Yu. I., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Reactions of the Trimethylsilyldiethyl Ester of Phosphorous Acid With Diacetyl"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 679-680

Abstract: Reacting trimethylsilyldiethyl ester of phosphorous acid with diacetyl at a temperature below 20° yields diethyl-α-trimethylsiloxy-α-acetoethylphosphonate, b.p. 84-86°/1 mm, d_4^{20} 1.1180, n_D^{20} 1.4335. The structure was confirmed by an independent synthesis from diethyl-α-hydroxy-α-acetoethylphosphonate and trimethylchlorosilane and by IR and NMR^{31}P spectroscopic analysis.

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USSR UDC: 547.241.07

LEVIN, Ya. A., GAZIZOVA, L. Kh., "Order of the Red Banner of Labor" Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov

"A Method of Synthesizing β-Chloroethylphosphonic Acid Dichloride"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71, Author's Certificate No 302345, Division C, filed 22 May 69, published 28 Apr 71, p 81

Translation: This Author's Certificate introduces a method of synthesizing β-chloroethylphosphonic acid dichloride by the reaction of the product of thermal isomerization of tris- β-chloroethyl phosphite with phosphorus pentachloride on heating in the presence of catalytic amounts of ferric chloride with subsequent isolation of the product by conventional methods. As a distinguishing feature of the patent, the product yield is increased by carrying out the process at 110-130°C.

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1/2 037 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DIETHYLPHOSPHONACETALS OF POLY VINYL ALCOHOL -U-

AUTHOR-(05)-LEVIN, YA.A., GAZIZOVA, L.KH., YAGFAROVA, T.A., KOVALENKO, V.I., TEYTELBAUM, B.YA.
COUNTRY OF INFO--USSR

SOURCE--VVSOKOMOL. SOEDIN., SER. A 1970, 12(3), 574-9

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(VINYL ALC.) (I) WAS ACETALATED WITH (ETO) SUB2 P (O)CH SUB2 CHO IN THE PRESENCE OF CF SUB3 CO SUB2 H AND H SUB2 O AT 60DEGREES TO GIVE A WHITE, RUBBERLIKE POLYMER (CONTG. LESS THAN OR EQUAL TO 8PERCENT P) IN 85-100PERCENT YIELD. IR SPECTRA AND THERMOMECH. TESTS SHOWED THAT THE POLYACETALS (II) (CONTG. 10PERCENT ACETALS GROUPS) WERE MORE SUSCEPTIBLE TO ELASTIC DEFORMATIONS THAN I, PRESUMABLY DUE TO DECREASED MOL. INTERACTION. INCREASED RIGIDITY, OBSD. IN II (CONTG. GREATER THAN 20PERCENT ACETAL GROUPS) HEATED TO 150-200DEGREES, WAS ATTRIBUTED TO CROSSLINKING OCCURRING DURING TRANSESTERIFICATION OF P(OET) SUB2 GROUPS WITH ADJACENT OH GROUPS. FACILITY: INST. ORG. FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

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USSR UDC:538.566+621.371

GRINGAUZ, K. I., GDALEVICH, G. L., RUDAKOV, V. A.

"Use of Spacecraft in Study of Ionospheric, Magnetospheric, and Interplanetary Plasma Performed by the Radio Engineering Institute of the Academy of Sciences USSR"

Tr. Radiotekhn. In-ta AN SSSR [Works of Radio Engineering Institute, Acad. Sci. USSR], No. 1, 1970, pp. 106-132 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh196 from the Resume)

Abstract: The primary results of experimental studies of plasma in the ionosphere of the earth and Venus and in near-earth, near-lunar, and interplanetary space performed by the Radio Engineering Institute of the USSR Academy of Sciences using missiles and satellites over the past ten years are presented briefly. Fifty-seven biblio. refs.

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